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**BUREAU OF LAND
MANAGEMENT
DATA
INTEGRATION**

BLM Library
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Data Integration

Land information is vital to federal, state and local governments: we use it every day. Whether you're with the highway department, the oil and gas commission, or the department of natural resources, you depend on land information ... as do surveyors, assessors, and natural resource managers.

Because so many of us share land data, the time has come to look at **integrating** this information. As the nation's largest federal land managing agency, the Bureau of Land Management (BLM) is heavily involved in data integration efforts.

BLM manages over 340 million acres of public lands, located mainly in the western states and in Alaska. We also manage more than 750 million acres of federal mineral holdings all over the country.

BLM maintains three major types of land information:

- national land and mineral records,
- the national Public Land Survey System, represented by the Bureau's Geographic Coordinate Data Base (GCDB), and
- resource information from the public lands administered by BLM.

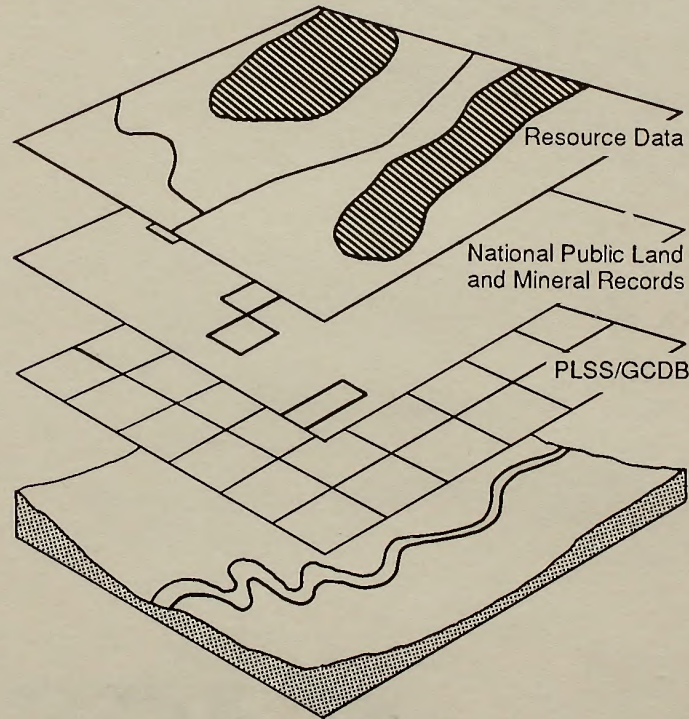
Land and mineral records now total over a **billion** documents, including a wide variety of ownership and use forms, such as Master Title Plats, Historical Indexes and case files.

The Bureau's Automated Land and Mineral Record System (ALMRS) project office in Denver is preparing specifications to automate most of these records and link them with the GCDB and resource data.

Prototype

The ALMRS staff is using a computer prototype to examine the process of integrating alphanumeric and spatial data used in these diverse land themes.

The prototype has information on nine townships near Farmington, New Mexico. Geographic Coordinates from the Public Land Survey System provide the foundation for portraying land status information. The prototype then superimposes oil and gas lease data from the BLM's case recordation system, and resource themes such as roads and cultural resource sites to build records like Master Title Plats (MTPs).



State, federal and private lands can be depicted in different colors on MTPs, as can oil and gas leases, roads, and wilderness areas. Rectangles that divide each section into workable units are called aliquot parts. Instead of digitizing these areas, we generate aliquot parts and update the MTPs from an alphanumeric data base.

By using elevation data, the ALMRS prototype has the capability to show a three-dimensional view of an area. It can also enlarge selected areas to show more graphic detail, or users can go directly to the data base where the case remarks file provides further information on a lease.

Benefits of Data Integration

Integrating land information will allow us to process and analyze vast amounts of data and create displays and overlays for conflict analysis and planning. This technology will eliminate most time-consuming plat drafting and manual records processes. It will improve decisionmaking by eliminating the need for land managers to physically overlay information or mentally mesh it together to integrate the data.

By 1993, BLM will finish implementation of ALMRS nationwide, in over 130 offices. BLM will then make the Geographic Coordinate Data Base and other land information available to other users in the community.

ALMRS

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Data Integrity

The new technologies that ALMRS represents will address only part of the data integration issue ... **how we share data is critical.**

BLM currently shares both manual and automated land information. In Oregon, we're working with other agencies to establish a digital land data base. BLM's Eastern States Office provides microfilm copies of patent documents to state and county assessors. We are currently automating the index to these historical documents.

For automated data to be really useful, however, federal, state, and local agencies will need to agree on **definitions** and **standards** for data elements. This will facilitate mutual data exchange. We will also need to decide what data should be collected and shared among the land information community.

While ALMRS will provide a consistent base for status and records data, standards for resource themes will need to be developed by the land information community as a whole.

Integrating land information is a big job, but for the first time we have the means to do it. BLM is developing land information standards and technology that will allow users to better share and integrate this vast information resource.

For further information about BLM's land information integration efforts, please contact:

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